

### 3.2.4 FUNCTION: INFRASTRUCTURE SERVICES

The Technical & Infrastructure Department is responsible for the following functions:

- Water
- Sanitation
- Cleansing & Refuse Removal
- Roads & Stormwater
- Electricity
- Building Inspectorate
- Project Management

Number of Municipal Staff employed in the Technical & Infrastructure Department:

• Strategic (Top Management)	-	1
• Tactical (Senior Management)	-	1
• Specialised (Skilled Technical, Supervision)	-	7
• Discretionary (Administration, Operators and Drivers)	-	20
• Basic	-	43

The following vacancies exist within the department

- General Superintendent Kareedouw
- General Superintendent Joubertina
- Electrical Artisan
- Town Planner

#### BUDGET 2006/07

*Total budgeted to render Technical & Infrastructure Functions*

Administrative /Manager Technical Services	=	R 1,231,692
Town Planning and Building Inspectorate	=	R 181,797
Cleaning (Refuse Removal)	=	R 2,602,155
Sewerage and Sanitation	=	R 3,553,086
Roads and Stormwater	=	R 1,793,54
Water	=	R 3,791,404
Electricity	=	R 1,155,444
Total	=	<u>R14,309,532</u>

#### EXPENDITURE 2006/07

*Actual expenditure per sub section within the Technical & Infrastructure Section:*

Administrative /Manager Technical Services,		
Town Planning and Building Inspectorate	=	R 702,409
Cleaning (Refuse Removal)	=	R 2,280,744
Sewerage and Sanitation	=	R 3,509,714
Roads and Stormwater	=	R 388,136
Water	=	R 2,579,273
Electricity	=	R 1,850,406
Total	=	<u>R11,310,679</u>

### 3.2.4.1 Sub Function: Water

#### 3.2.4.1.1 Overview

Koukamma Municipality is a registered Water Services Authority and Water Services Provider. The key objective is to provide purified potable drinking water and water borne sanitation system to its residents. (37 000 people: Source; Census 2001).

The Water section mainly deals with daily maintenance routines to ensure sustainability of the service.

#### 3.2.4.1.2 Description of activity

Water is a specialised provision function ensuring that all residents and tourists are served in a sustainable manner. By doing this it promotes healthy lifestyle and ensures a clean and healthy environment.

The Water section is mostly responsible for Water provision and includes the following:

1. Water source management
2. Maintenance of Water & Sewerage networks (reticulation level)
3. Management of water loss control
4. Water purification (In compliance with Water Act 1997)
5. Facilitate community awareness campaigns. (WSA)

#### 3.2.4.1.3 Analysis of the Function

Planning and coordination was done by the head of department. There were three (3) Supervisors administering water services, 9 operators, 8 general workers. The three (3) supervisors were also involved in sanitation services.

#### 3.2.4.1.4 Key Performance Indicators targets and variances

PROJECT	PERFORMANCE INDICATOR	ACTUAL 2005/06	TARGET 2006/07	ACTUAL 2006/07	TARGET 2007/08
Develop Maintenance Plans	Implementation of maintenance plans by supervisors	-	<ul style="list-style-type: none"><li>• 2 x Plans by September 2006.</li><li>• One plan for Tsitsikamma</li><li>• One plan for Langkloof</li></ul>	Plans could not be developed and implemented due to internal capacity constraints. To be carried over to the next financial year.	
Ensure Sufficient bulk water supply to meet all basic service requirements	Access to potable drinking water in Clarkson	Planning and registration completed for a new concrete reservoir.	<ul style="list-style-type: none"><li>• Completion of the reservoir</li></ul>	Project was 40% completed due to limited available skilled ontractors. The remainder of the project to be carried over and completed in 2007/08.	Completion of reservoir. Completion Construction certificate.
Development of Water services development Plan	Appointment of service providers facilitated by Cacadu district Municipality.	Tenders awarded.	<ul style="list-style-type: none"><li>• Completion of Water Services Development Plan</li></ul>		

Implementation of Drought Relief Projects (Misgund & Louterwater)	Planning and tender processes completed.	Drilling of boreholes; 3 boreholes in Misgund and 3 boreholes in Louterwater.	<ul style="list-style-type: none"> <li>Completion of project.</li> </ul>		
Installation of water meters	Install 447 water meters in Mountain View		<ul style="list-style-type: none"> <li>Install 447 water meters in Mountain View.</li> </ul>	Installation of water meters were partially attended to. Due to limited available budget will be carried over to the next financial year.	

#### 3.2.4.1.5 Key issues for 2006/2007

1. Develop quarterly maintenance plans
2. Cleaning of 4 reservoirs in Coldstream, Sandrift, Krakeel and Kareedouw
3. 20 x new Water Connections
4. Reticulation maintenance in the municipal area
5. Develop a Water Service Development Plan
6. Implementation of Municipal Infrastructure Grant Projects (MIG)
7. Implementation of Drought Relief Projects

The following table indicated the level of services at reticulation level.

Level of Service	Nr. Of households	% of municipal households	Ward 1	%	Ward 2	%	Ward 3	%	Ward 4	%	Ward 5	%
Pipe water(dwelling)	4996	50.1	1198	23.9	1397	27.9	898	17.9	464	9.2	1037	20.7
Pipe water(yard)	2691	27.0	716	26.6	180	6.6	539	20.0	864	32.1	390	14.4
Pipe water<200m	716	7.1	400	55.8	77	10.7	26	3.6	98	13.6	112	15.6

#### 3.2.4.1.6 Strategic Objectives

1. Maintenance of existing infrastructure
2. Ensure sufficient bulk water supply to meet requirements
3. Upgrade reservoir (Clarkson)
4. Install water meters (revenue issues)

#### 3.2.4.1.7 Progress on projects

##### Highlights

- The following projects were identified and successfully registered on the Municipal Infrastructure Grant Management Information System:
- Eerste Rivier Bulk Water Supply – the project entails providing sustainable water supply to 60 low income households



- The following projects were implemented:
  - Misgund Bulk Water Supply – this project entailed providing sustainable water supply to 401 low income households
  - Koomansbos Bulk Water Supply - this project entailed providing sustainable water supply to 60 low income households
- A Water Surface Audit was compiled by a service provider and presented to council. This was done to provide council with a true reflection in terms of water supply in the area. Improvements and recommendations are noted in this document.
- Cleaning of reservoirs to improve water quality was done at regular maintenance intervals in Woodlands, Stormsriver, Coldstream, and Kareedouw.
- A project to assist Koukamma with bulk water in the areas of Joubertina, Clarkson, Louterwater, Misgund and Woodlands has been identified and registered to assist council with long term planning for improve water delivery to its residents.
- The old infrastructure (asbestos water pipeline) needs to be replaced in Joubertina. This will prevent water waste in the event of pipe bursts.

## Challenges

A key challenge for Kou-Kamma in terms of sustainable water services is the vast geographical area and the large number of settlements that requires water services. Kou-Kamma has 52 water and sanitation plants that require maintenance and rehabilitation. Such a large operational responsibility places demands in terms of the required fleet needed for such operations. The following table outlines the current fleet management practices as well as a reflection of the usefulness of the current system:

The following table shows the changed situation from the 2001 census to backlog studies conducted in 2006. This shows a positive improvement in terms of the increase number of households with water on site. It shows that Kou-Kamma achieved above the average backlog currently experienced in the District.

Level of service	Water on site		Community Stand		Borehole/tank		Natural water/dam		water vendor/other	
Location	Census 2001	RSS 2006	Census 2001	RSS 2006	Census 2001	RSS 2006	Census 2001	RSS 2006	Census 2001	RSS 2006
	%	%	%	%	%	%	%	%	%	%
Eastern Cape	37.4	41.8	25.3	25.1	4.0	3.8	31.4	28	1.9	1.4
Cacadu DC	74.7	85.8	17.9	10.0	3.1	1.4	2.8	1.4	1.5	1.3
Kou-Kamma	77.0	93.8	12.5	6.2	3.9	0.0	5.3	0.0	1.3	0.0

The table below shows the water services backlog as recorded during the 2001 census. This indicated that half of the backlog was located in ward 3 and 5.

Level of Service	Nr. Of households	% of munic. h/holds	Ward 1	%	Ward 2	%	Ward 3	%	Ward 4	%	Ward 5	%
Pipe water(dwell)	4996	50.1	1198	23.9	1397	27.9	898	17.9	464	9.2	1037	20.7
Pipe water ( yrd)	2691	27.0	716	26.6	180	6.6	539	20.0	864	32.1	390	14.4
Pipe water<200m	716	7.1	400	55.8	77	10.7	26	3.6	98	13.6	112	15.6

#### 3.2.4.1.8 Proposed Corrective Actions

### 3.2.4.2 Sub Function: Sanitation

#### 3.2.4.2.1 Overview

#### 3.2.4.2.2 Description of activity

Sanitation is a specialised function which strives to provide households and businesses with well maintained and reliable water borne sanitation systems.

The sanitation section is mainly responsible for the following:

1. Effluent control to nature (Standards)
2. Facilitate community awareness campaigns. (WSA)

#### 3.2.4.2.3 Analysis of the Function

Planning and co-ordination was done by the head of department. Three supervisors administered sanitation services, 6 plant operators and 4 general workers. Supervisors were also responsible for the Water Function.

#### 3.2.4.2.4 Key Performance Indicators targets and variance

PROJECT	PERFORMANCE INDICATOR	ACTUAL 2005/06	TARGET 2006/07	ACTUAL 2006/07	TARGET 2007/08
Develop Maintenance Plans	Implementation of maintenance plans by supervisors		<ul style="list-style-type: none"> <li>• 2 x Plans by September 2006.</li> <li>• One plan for Tsitsikamma</li> <li>• One plan for Langkloof</li> </ul>	Plans could not be constructed and implemented due to internal capacity constraints. To be carried over to the next financial year.	

PROJECT	PERFORMANCE INDICATOR	ACTUAL 2005/06	TARGET 2006/07	ACTUAL 2006/07	TARGET 2007/08
Upgrade existing sewerage utilities	Sewerage facility upgrade.	Appointing consulting engineers for tender and project management processes.	<ul style="list-style-type: none"> <li>Stormsriver – Upgrade sewerage treatment works</li> <li>Coldstream – Upgrade Sewerage Works (Puntjiesbos)</li> <li>Sandrift – Blikkiesdorp sewer works upgrade</li> <li>Clarkson – Upgrade existing Sewer Reticulation</li> <li>Joubertina – Sewerage reticulation</li> <li>Woodlands – Upgrade Sewerage Plan Building</li> <li>Twee Riviere – Lining of sewerage emergency dam</li> <li>Joubertina – New Sewage Removal Tanker</li> </ul>	Sewerage facilities could not be upgraded due to budgetary constraints.	Provision in terms of funding should be made for upgrading of sewerage facilities.
Maintenance on existing infrastructure and utilities			<ul style="list-style-type: none"> <li>Maintenance to Existing Tanker : Joubertina</li> <li>Daily Maintenance of Toilets: Qhayiyalethu</li> <li>Maintenance of Toilets: Krakeel River ; Joubertina</li> <li>Kareedouw – Fencing Uitkyk sewerage pump station</li> <li>Kareedouw – Fencing of sewerage ponds</li> </ul>	Maintenance on electrical infrastructure could not be implemented due to budgetary constraints.	Provision in terms of funding should be made for upgrading of sewerage facilities.

PROJECT	PERFORMANCE INDICATOR	ACTUAL 2005/06	TARGET 2006/07	ACTUAL 2006/07	TARGET 2007/08
Deal with de-sludging requirements	De-sludging of digesters in Sandrift, Clarkson and Coldstream		<ul style="list-style-type: none"> <li>Sandrift – De slugging of digesters</li> <li>Clarkson – De sludging of digester</li> <li>Coldstream – Enlarge De-sludging lagoons</li> </ul>	Aging of Municipal sewerage tanker resulted in sewerage tanker being out of service on a regular basis. Making it impossible to address de-sludging requirements.	Possible procurement of a new / reliable second hand truck to be considered.
Krakeel Bucket Eradication	Eradicate 148 buckets in Krakeelriver.		<ul style="list-style-type: none"> <li>Eradicate 148 buckets</li> </ul>	Tender was advertised but to due limited funding project had to be re-advertised. RE-advertisement could only take place after six months (CIDB requirements)	
Stormsriver West Sewerage Mainline	Replace existing sewer mainline.	-	<ul style="list-style-type: none"> <li>Replace existing sewer mainline.</li> </ul>	Project was completed.	

#### 3.2.4.2.5 Key Issues for 2006/2007

1. Develop quarterly maintenance plans
2. 20 x new Sewer Connections
3. Reticulation maintenance in the municipal area
4. Pump Station Maintenance in all related areas.

#### 3.2.4.2.6 Strategic Objectives

1. Installation of household sanitation
2. Upgrade of Sewerage utilities
3. Maintenance of existing infrastructure and utilities
4. Deal with de-sludging requirements
5. Deal with the Bucket Eradication Programme

#### 3.2.4.2.7 Progress on Projects

##### Highlights

- Planning and preliminary designs for the following projects commenced:
  - Krakeel Bucket Eradication Project – this project entails the eradication of 126 buckets as well as pits;
  - Woodlands Bucket Eradication Project - this project entails the eradication of 29 households and 3 churches, as well as improving the reticulation and solving existing problems with final outflow.



□ The following projects were implemented:

- Stormsriver West Sewer mainline – this project entailed replacing the defective sewer mainline in Stormsriver Village improving the sanitation service to 447 low income households.

## Challenges

Apart from the challenge of installing appropriate levels of service, the operations and maintenance of the system represents a challenge. Communities complain that they wait up to two weeks to have sewerage problems attended to and as this poses health related risks. Solutions should be found to deal with this problem. Increased community awareness is still necessary regarding their own practices that result in blocked pipes.

### *Backlog for sanitation services – Backlog study 2006 (RSS)*

	Ward	Sewerage		Issues	Raised as issue by ward committee
		Current	Future		
Louterwater/ Misgund	1			<ul style="list-style-type: none"> <li>• Inadequate capacity of pipes</li> <li>• Blocked drains</li> <li>• Foul water on surface due to sand blockages</li> </ul>	
Joubertina/Ravinia Krakeel Rivier	2	Mainly on site systems – conservancy tanks Bucket systems. Ravinia has water borne system		<ul style="list-style-type: none"> <li>➤ Project in progress to eradicate buckets</li> <li>➤ Lack of reticulation</li> <li>➤ Project were not approved for reticulation</li> <li>➤ Maintenance and Desludging</li> </ul>	
Kareedouw	3			<ul style="list-style-type: none"> <li>• Sewer blockages due to client negligence</li> <li>• Maintenance and Desludging</li> </ul>	
Woodlands Clarkson	4	Water borne system		<ul style="list-style-type: none"> <li>• Inadequate capacity of pipes</li> <li>• Sand in pipes</li> <li>• Maintenance and Desludging</li> <li>• Blockages in system</li> </ul>	Slow response time to problems
Coldstream	5			<ul style="list-style-type: none"> <li>• Maintenance and Desludging</li> <li>• Final outfall works have too limited capacity</li> </ul>	



	Ward	Sewerage		Issues	Raised as issue by ward committee
		Current	Future		
Stormsriver	5	Water Borne sewerage in the Stormsriver West.. Septic Tanks in village area		<ul style="list-style-type: none"> <li>• Maintenance and Desludging</li> <li>• Final outfall works have too limited capacity</li> </ul>	
Thornham	5	No formal system. Septic Tanks & VIP systems			
Nomphumelelo/ Sanddrif	5	Village is water borne – rest of node septic tanks		<ul style="list-style-type: none"> <li>• Poor condition of final outfall works as well as too small capacity</li> <li>• Project approved for the replacement of the main line</li> </ul>	

#### 3.2.4.2.8 Proposed Corrective Actions

### 3.2.4.3 Sub Function: Roads and Stormwater

#### 3.2.4.3.1 Overview

Include all activities relating to the maintenance of stormwater management systems, implementing stormwater maintenance plans and the upgrading of the municipal road infrastructure, ensuring a safe and acceptable road network.

#### 3.2.4.3.2 Description of activity

Roads and Stormwater function is a specialized function focusing on:

1. continuous upgrading of municipal road / street network (50 km tarred / 250 km gravel) – regular damages caused by heavy timber and commercial vehicles.
2. regular cleaning and developing of stormwater management systems

#### 3.2.4.3.3 Analysis of the Function

Planning and co-ordination was done by the head of department. The position of supervisor is vacant. This function is partially administered by the Supervisor for Cleansing with two general workers. In Clarkson a contractor was appointed to administer the labour section of this function.

### 3.2.4.3.4 Key Performance Indicators targets and variance

PROJECT	PERFORMANCE INDICATOR	ACTUAL 2005/06	TARGET 2006/07	ACTUAL 2006/07	TARGET 2007/08
Patching of potholes tarred streets	Implementation of maintenance plans by supervisors	Plans could not be implemented due to limited resources.	• 60 km of potholes to be patched	Potholes were patched. Limited material such as tar and gravel delayed this process. Other internal capacity shortages such as vehicles, staff and budget constraints delayed this process.	Patch tar and gravel potholes in Koukamma
Clean stormwater channels and culverts	Clear stormwater channels and culverts	Project was implemented. Slow progress due to backlogs and limited resources.	• 100km	Stormwater channels were cleared where resources were available. Complaints in terms of stormwater channels were addressed on request of community members. Capacity constraints with reference to staff, plant and transport	Sufficient provision for maintenance plan to clear stormwater channels and culverts should be addressed in budget.
Upgrade West Street, Louterwater	200m gravel road		• 200m gravel roads	Due to budgetary constraints this project could not be implemented and will be rolled over for implementation in the next financial year.	Funding to complete this project to be procured.
Upgrade Darnell Street, Stormsriver Village	Upgrade Darnell Street from gravel to tar road.		• 4km gravel road to be tarred	Due to budgetary constraints this project could not be implemented and will be rolled over for implementation in the next financial year.	Funding to complete this project to be procured.

### 3.2.4.3.5 Key issues for 2006/2007

1. Patching of 60km potholes
2. Cleaning of Stormwater channels and culverts / catch pits (100km)

#### 3.2.4.3.6 Strategic Objectives

1. To maintain all municipal tar roads (50km) to ensure safe access for public and tourists
2. To maintain and develop public transport services, e.g. provide facilities & facilitate growth and development of transport, e.g. taxi ranks and access to transport
3. To maintain all Gravel roads ensuring access to transport network linking each community and all public amenities and facilities, e.g. schools, clinics etc.
4. To upgrade gravel roads to tarred roads to enable safe surfaces and to create new roads where it is needed, e.g. taxi – routes

#### 3.2.4.3.7 Progress on Projects

##### Highlights

- Tar and gravel potholes were addressed by municipal staff upon availability of plant and material. Maintenance planning was done accordingly.
- The following projects were identified and successfully registered on the Municipal Infrastructure Grant Management Information System:
  - > Flood repairs municipal roads – Two consultants were appointed to do assessments and compilation of preliminary design reports for remedial work to municipal roads in the Tsitsikamma and Langkloof areas.
- A grader was procured from province to improve conditions of minor and municipal roads, with the main focus on access roads.
- Stormwater channels were cleared with manual labour.

##### Challenges

Kou-Kamma is an area with a high rainfall. This creates challenges in areas where storm water systems are insufficient resulting in road surface damage as well as damage to houses. Heavy vehicles related to local agricultural and industries e.g. the transport of milk, fruits and timber places additional wear and tear on the roads.

The Koukamma area has a total of 50 km tarred streets and 200 km gravel streets.

#### 3.2.4.3.8 Proposed Corrective Actions

#### 3.2.4.4 Sub Function: Electricity

##### 3.2.4.4.1 Overview

This is a specialized function in terms of electricity provision. ESKOM provide electricity in bulk to Coldstream, Mountain View, Kagiso Heights and New Rest. The remainder of areas is serviced by ESKOM.

##### 3.2.4.4.2 Description of activity

The municipality is responsible for maintenance of distribution reticulation licensed areas in line with the National Energy Regulator (NER) including streetlights to designated areas.



### 3.2.4.4.3 Analysis of the Function

In four areas this function is provided by the Municipality:

1. Mountain View
2. New Rest
3. Kagiso Heights
4. Coldstream

No staff is available to render this service, council therefore, when necessary, utilize qualified service providers to do repairs on electrical reticulation.

The maintenance on streetlights is currently being done by ESKOM. Possible hand over of streetlight maintenance to Koukamma commenced and should be finalized in the next financial year.

### 3.2.4.4.4 Key Performance Indicators targets and variance

PROJECT	PERFORMANCE INDICATOR	ACTUAL 2005/06	TARGET 2006/07	ACTUAL 2006/07	TARGET 2007/08
<b>Maintenance of electrical reticulation where Koukamma is the registered service provider.</b>	Annual maintenance on electrical infrastructure	Regular maintenance on electrical reticulation.	Limited maintenance done due to absence of resources and budget available.	Internal capacity constraints such as human resources, equipment and transport exist. Service providers are currently being utilized to assist council with this function.	Appointment of electrician. Procure all relevant equipment.
<b>Coldstream Electrification</b>	Electrification of 189 households	Planning and application for funding completed.	Implement project and connect 189 households.	Reticulation can not be energized due to outstanding decision to be taken by ESKOM.	Completion of electrification project.
<b>Louterwater Electrification</b>	Electrification of 598 households.	-	Electrify 598 low income households	Due to budgetary constraints this project could not be implemented and will be rolled over for implementation in the next financial year.	Completion of electrification project.
<b>Ravinia Electrification</b>	Electrification of 300 households.	-	Electrify 300 low income households	Due to budgetary constraints this project could not be implemented and will be rolled over for implementation in the next financial year.	Completion of electrification project.